

1125-51-2537

**Osman Yardimci\*** (ozy0003@tigermail.auburn.edu), 221 Parker Hall, Auburn, AL 36849. *On the Principle of Planimeters.*

We studied the mathematics of various mechanical devices, called planimeters, which before the time of computers were used to determine the area of an arbitrary two-dimensional shape. Numerous papers were written on this subject. By combining the intuitive and rigorous approaches, we explained the reason behind the linear and polar planimeters in a way accessible for students with basic calculus background. We also considered variants of the planimeters to measure other quantities of the planar regions. (Received September 20, 2016)